



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/759,204

01/20/2004

Akira Shimizu

NIT-407

7747

7590

07/18/2006

Mattingly, Stanger & Malur, P.C.
Suite 370
1800 Diagonal Road
Alexandria, VA 22314

EXAMINER

FRANKLIN, RICHARD B

ART UNIT

PAPER NUMBER

2181

DATE MAILED: 07/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/759,204	Applicant(s) SHIMIZU ET AL.	
	Examiner Richard Franklin	Art Unit 2181	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 May 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Fritz Fleming
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100

Fritz Fleming
7/7/2006

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1 – 6 have been examined.

Response to Arguments

2. Applicant's arguments filed 10 May 2006 have been fully considered but they are not persuasive.
3. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., the new address is different than the request address) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).
4. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Claim Rejections – 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

Art Unit: 2181

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by US Patent No. 5,870,467 (hereinafter Imai).

As per claim 1, Imai teaches an IO requesting method of issuing an IO request (Figure 1 Item 11, Col 8 Lines 15 – 35) to a storage apparatus (Col 8 Line 64 – Col 9 Line 7) of a computer system by execution of a program in said computer system (Col 8 Lines 15 – 35), wherein a program identifier set in advance (Col 9 Lines 8 – 21) in said program and a request address are applied to a first function for inputting two values to generate one value used as a new address with said program identifier appended thereto, and said IO request is issued by using said new address (Figure 1 Item 11, Col 4 Lines 35 – 60, Col 5 Lines 16 – 47, Col 26 Lines 18 – 45).

Claim Rejections – 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 2 – 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 5,870,467 (hereinafter Imai) in view of US Patent Application Publication No. 2004/0010707 A1 (hereinafter Umebayashi).

Pat
2006
July 7

As per claim 2, Imai teaches a computer executing a first program issuing an IO request to a storage apparatus and a second program for collecting said IO request and transmitting said IO request as an IO command to said storage apparatus (Imai; Col 6 Lines 12 – 52) wherein a program identifier set in advance in said first program (Imai; Figure 1 Item 11, Col 9 Lines 8 – 23) and a request address are applied to a first function for inputting two values, that is, said program identifier and said request address, to generate one value used as a new address with said program identifier appended thereto, and said IO request is issued by using said new address (Imai; Figure 1, Col 4 Lines 35 – 60, Col 5 Lines 16 – 47, Col 26 Lines 18 – 45); if said IO request is an IO request issued to a logical volume existing in said storage apparatus as a logical volume prescribed to be a protected logical volume, a second function for carrying out an operation to input one value for generation of two output values as an operation inverse to that of said first function generates an original request address and a program identifier, that is, said two output values, from said one input value, that is an address specified in said IO request as said new address (Imai; Figure 1, Col 4 Lines 35 – 60, Col 5 Lines 16 – 47, Col 26 Lines 18 – 45); said second program has a table associating a program identifier, a logical volume existing in said storage apparatus and a network address with each other (Imai; Col 6 Lines 12 – 34).

Imai does not teach wherein said table is searched for a network address associated with said generated program identifier and a logical volume indicated by said generated original request address and a communication with said storage apparatus is

carried out by using said network address as an address of a transmission originator in order to issue an IO command to said original request address.

However, Umebayashi teaches wherein said table is searched for a network address associated with said generated program identifier and a logical volume indicated by said generated original request address and a communication with said storage apparatus is carried out by using said network address as an address of a transmission originator in order to issue an IO command to said original request address (Umebayashi; Figure 1, Paragraphs [0041] – [0043]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the teachings of Imai to include wherein said table is searched for a network address associated with said generated program identifier and a logical volume indicated by said generated original request address and a communication with said storage apparatus is carried out by using said network address as an address of a transmission originator in order to issue an IO command to said original request address because doing so would prevent a possibility for a malicious system manager to rewrite the access rights for writing data, or to utilize the writing data improperly under by reading and writing under the right given to the system manager (Imai; Col 2 Lines 47 – 52).

As per claim 3, Imai teaches a computer system comprising one or more computers and one or more storage apparatus connected to said computers by a network apparatus (Imai; Figure 1, Col 8 Lines 45 – 65) wherein in each of said

computers a first program issuing an IO request (Imai; Figure 1 Item 11, Col 9 Lines 8 – 23) to a storage apparatus and a second program for collecting said IO request (Imai; Figure 1 Item 10) and transmitting said IO request as an IO command to said storage apparatus are executed (Imai; Figure 1, Col 8 Lines 45 – 65); a program identifier set in advance in said first program (Imai; Figure 1 Item 11, Col 9 Lines 8 – 23) and a request address are applied to a first function for inputting two values, that is, said program identifier and said request address, to generate one value used as a new address with said program identifier appended thereto, and said IO request is issued by using said new address (Imai; Figure 1, Col 4 Lines 36 – 60, Col 5 Lines 16 – 46, Col 26 Lines 18 – 45); said second program has a table associating a program identifier, a logical volume existing in said storage apparatus and a network address with each other (Imai; Col 6 Lines 12 – 34); and if said IO request is an IO request issued to a logical volume existing in said storage apparatus as a logical volume prescribed to be a protected logical volume, a second function for carrying out an operation to input one value for generation of two output values as an operation inverse to that of said first function generates an original request address and a program identifier, that is, said two output values, from said one input value, that is an address specified in said IO request as said new address (Imai; Figure 1, Col 4 Lines 35 – 60, Col 5 Lines 16 – 47, Col 26 Lines 18 – 45), and on the basis of said network address used as an address of a transmission originator, said network apparatus determines whether or not a communication with said storage apparatus can be carried out (Imai; Figure 2 Items S24 and S27, Col 5 Lines 16 – 47).

Imai does not teach wherein said table is searched for a network address associated with said generated program identifier and a logical volume indicated by said generated original request address and a communication with said storage apparatus is carried out by using said network address as an address of a transmission originator in order to issue an IO command to said original request address.

However, Umebayashi teaches wherein said table is searched for a network address associated with said generated program identifier and a logical volume indicated by said generated original request address and a communication with said storage apparatus is carried out by using said network address as an address of a transmission originator in order to issue an IO command to said original request address (Umebayashi; Figure 1, Paragraphs [0041] – [0043]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the teachings Imai to include wherein said table is searched for a network address associated with said generated program identifier and a logical volume indicated by said generated original request address and a communication with said storage apparatus is carried out by using said network address as an address of a transmission originator in order to issue an IO command to said original request address because doing so would prevent a possibility for a malicious system manager to rewrite the access rights for writing data, or to utilize the writing data improperly under by reading and writing under the right given to the system manager (Imai; Col 2 Lines 47 – 52).

As to claim 4, Imai also teaches wherein, in place of said network apparatus, said storage apparatus determines whether or not an access to a logical volume existing in said storage apparatus can be made (Imai; Col 6 Lines 12 – 34).

As to claim 5, Imai teaches an access control method adopted for a storage apparatus said method comprises the steps of recognizing a received IO command as an IO command issued to a logical volume existing in said storage apparatus as a logical volume prescribed to be a logical volume protected from a received IO command (Imai; Figure 2 Items S24 and S27, Col 6 Lines 12 – 34, Col 8 Lines 15 – 34, Col 9 Lines 8 – 23); using a second function for inputting one value to generate two output values as a function for obtaining a second address and a program identifier, that is, said two output values, from said one value, that is a first address specified in said IO command (Imai; Col 5 Lines 15 – 59); determining whether or not an access to said logical volume can be made on the basis of said program identifier and an association table (Imai; Col 8 Line 45 – Col 9 Line 23); and replacing said first address specified in said IO command with said second address and processing said IO command in case an access by using said IO command is determined to be an access that can be made (Imai; Col 8 Line 45 – Col 9 Line 23, Col 10 Lines 10 – 50).

Imai does not teach wherein said association table is provided as a table for associating a logical volume identifier with a program identifier for identifying a program allowed to make an access to a logical volume identified by said logical volume identifier.

However, Umebayashi teaches wherein said association table is provided as a table for associating a logical volume identifier with a program identifier for identifying a program allowed to make an access to a logical volume identified by said logical volume identifier (Umebayashi; Figure 1, Paragraphs [0041] – [0043]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the teachings of Imai to include wherein said association table is provided as a table for associating a logical volume identifier with a program identifier for identifying a program allowed to make an access to a logical volume identified by said logical volume identifier because doing so would prevent a possibility for a malicious system manager to rewrite the access rights for writing data, or to utilize the writing data improperly under by reading and writing under the right given to the system manager (Imai; Col 2 Lines 47 – 52).

As to claim 6, Imai teaches an access control method adopted for a storage apparatus said method comprises the steps of recognizing a received IO command as an IO command included in a packet transmitted through a network as an IO command issued to a logical volume existing in said storage apparatus as a logical volume prescribed to be a logical volume protected from a received IO command (Imai; Col 5 Lines 15 – 59, Col 8 Line 45 – Col 9 Line 23); using a second function for inputting one value to generate two outputs as a function for obtaining a second address and a program identifier, that is, said two output values, from said one value, that is, a first address specified in said IO command (Imai; Col 5 Lines 15 – 59); determining whether

or not said pocket can be transferred to said storage apparatus on the basis of said program identifier and an association table (Imai; Col 8 Line 45 – Col 9 Line 23); and replacing said first address specified in said IO command with said second address and transmitting said packet in case an access by using said IO command is determined to be an access that can be made (Imai; Col 8 Line 45 – Col 9 Line 23, Col 10 Lines 10 – 50).

Imai does not teach wherein said association table is provided as a table for associating a storage apparatus identifier for identifying said storage apparatus, a logical volume identifier for identifying a logical volume existing in said storage apparatus and a program identifier for identifying a program allowed to make an access to said logical volume identified by said logical volume identifier with each other.

However, Umebayashi teaches wherein said association table is provided as a table for associating a storage apparatus identifier for identifying said storage apparatus, a logical volume identifier for identifying a logical volume existing in said storage apparatus and a program identifier for identifying a program allowed to make an access to said logical volume identified by said logical volume identifier with each other (Umebayashi; Figure 1, Paragraphs [0041] – [0043]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the teachings of Imai to include wherein said association table is provided as a table for associating a storage apparatus identifier for identifying said storage apparatus, a logical volume identifier for identifying a logical volume existing in said storage apparatus and a program identifier for

identifying a program allowed to make an access to said logical volume identified by said logical volume identifier with each other because doing so would prevent a possibility for a malicious system manager to rewrite the access rights for writing data, or to utilize the writing data improperly under by reading and writing under the right given to the system manager (Imai; Col 2 Lines 47 – 52).

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Richard Franklin whose telephone number is (571) 272-0669. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Fritz Fleming can be reached on (571) 272-4145. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Richard Franklin
Patent Examiner
Art Unit 2181

Fritz M. Fleming
FRITZ FLEMING
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100
7/7/2006